What is Claimed:

1. A microcavity-forming system for making microcavities in a wire comprising:

a coating station receiving the wire from a source of the wire and applying a polymer coating to the wire;

a mask-forming station receiving the polymer-coated wire from the coating station and blowing moist air over the polymer-coated wire to form air bubbles which result in holes in the polymer coating, thereby creating a mask;

an etching station receiving the wire, as coated with the polymer mask, from the mask-forming station and etching the wire through the holes in the polymer mask to form microcavities in the wire; and

a stripping station receiving the wire from the etching station and removing the polymer mask from the wire, leaving the wire with microcavities.

2. The system of claim 1 wherein the wire is tungsten.

3. The system of claim 2 wherein the coating station comprises a tank housing a solution of the polymer in a fast-evaporating solvent.

4. The system of claim 3 wherein the solution comprises 0.1 to 10 percent by weight of polymer.

5. The system of claim 3 wherein the polymer is polystyrene and the solvent is selected from the group consisting of benzene, toluene, and carbon disulfide.

6. The system of claim 5 wherein the solvent is carbon disulfide.

7. The system of claim 2 wherein the mask-forming station comprises a chamber defining a controlled atmosphere through which the wire travels.

8. The system of claim 7 wherein the atmosphere has a humidity of at least 30 percent.

9. The system of claim 2 wherein the etching station comprises a container retaining an etching bath.

10. The system of claim 9 wherein the etching bath is hydrogen peroxide.

11. The system of claim 2 wherein the stripping station comprises an enclosure containing a solvent bath.

12. A process of forming microcavities in a wire comprising the steps of:

(a) receiving the wire from a source of the wire and applying a polymer coating to the wire;

(b) blowing moist air over the polymer-coated wire to form air bubbles which result in holes in the polymer coating, thereby creating a mask;

(c) etching the wire through the holes in the polymer mask to form microcavities in the wire; and

(d) removing the polymer mask from the wire, leaving the wire with microcavities.

13. The process of claim 12 wherein the wire is tungsten.

14. The process of claim 13 wherein the polymer is applied as a solution of the polymer in a fast-evaporating solvent.

15. The process of claim 14 wherein the solution comprises 0.1 to 10 percent by weight of polymer.

16. The process of claim 15 wherein the polymer is polystyrene and the solvent is selected from the group consisting of benzene, toluene, and carbon disulfide.

17. The process of claim 16 wherein the solvent is carbon disulfide.

18. The process of claim 12 wherein step (a) includes controlling the thickness of the polymer coating applied to the wire so that the thickness of the polymer coating is about 0.05 to 1 μm when dried.

19. The process of claim 12 further comprising the step of controlling the temperature, moisture content, and speed of the moist air blown over the polymer-coated wire.

20. The process of claim 19 wherein the speed of the moist air blown over the polymer-coated wire is between 30 and 300 meters per minute.

21. The process of claim 12 wherein step (b) is performed while drawing the wire through a controlled atmosphere.

22. The process of claim 21 wherein the atmosphere has a humidity of at least 30 percent.

23. The process of claim 13 wherein step (c) includes passing the polymer-coated wire through a hydrogen peroxide etching bath.

24. The process of claim 12 wherein, before step (c), the process includes a preliminary etch of the polymer mask to assure that the holes created by the air bubbles extend completely through the polymer mask.

25. The process of claim 12 wherein step (b) includes evacuating the air bubbles from the holes.

26. A process of making an etching mask having arrays of holes and conforming to substantially any surface, including an arbitrary curved surface, the process comprising:

(a) providing the surface to be etched;

(b) applying a polymer coating to the surface; and

(c) blowing moist air over the polymer-coated surface to form air bubbles which result in holes in the polymer coating, thereby creating a mask.

27. The process of claim 26 wherein the holes are sub-micrometer-to-micrometer sized.

28. The process of claim 26 wherein the polymer is applied as a solution of the polymer in a fast-evaporating solvent.

29. The process of claim 28 wherein the solution comprises 0.1 to 10 percent by weight of polymer.

30. The process of claim 28 wherein the polymer is polystyrene and the solvent is selected from the group consisting of benzene, toluene, and carbon disulfide.

31. The process of claim 26 wherein step (b) includes controlling the thickness of the polymer coating applied to the surface so that the thickness of the polymer coating is about 0.05 to 1 μm when dried.

32. The process of claim 26 further comprising the step of controlling the temperature, moisture content, and speed of the moist air blown over the polymer-coated surface.

33. The process of claim 26 wherein the speed of the moist air blown over the polymer-coated surface is between 30 and 300 meters per minute.

34. The process of claim 26 wherein step (c) is performed while controlling the atmosphere surrounding the surface and into which the moist air is blown.

35. The process of claim 34 wherein the atmosphere has a humidity of at least 30 percent.

36. The process of claim 26 further comprising the step of etching the polymer mask to assure that the holes created by the air bubbles extend completely through the polymer mask.

37. The process of claim 26 wherein step (c) includes evacuating the air bubbles from the holes.